

REMARKS

This application has been carefully considered in connection with the Examiner's Final Office Action dated December 31, 2007. Reconsideration and allowance are respectfully requested in view of the following.

Summary of Rejections

Claims 1-4, 7, 11-34 and 36-41 were pending at the time of the Final Office Action.

Claims 1-4, 7, 11-34 and 36-41 were rejected under 35 USC § 103.

Summary of Response

Claims 1, 3, 4, 11, 13-16, 21, and 24-26 are currently amended.

Claim 42 is new.

Claims 2, 7, 12, 17, 22, 23, 27, 31-34, and 36-41 were previously presented.

Claims 5-6, 8-10, and 35 were previously canceled.

Claims 18-20 and 28-30 remain as originally filed.

Remarks and Arguments are provided below.

Summary of Claims Pending

Claims 1-4, 7, 11-34, and 36-41 are currently pending following this response.

Improper Final Rejection

Applicant respectfully submits that the finality of the Final Office Action dated December 31, 2007 is improper. MPEP 706.07(a) states, "second or any subsequent actions on the merits shall be final, **except where the examiner introduces a new ground of rejection that is neither necessitated by applicant's amendment of the claims, nor based on information submitted in an information disclosure statement**" (emphasis added). Applicant respectfully submits that the new ground of rejection introduced by the Examiner against at least independent Claim 31 is neither necessitated by Applicant's amendment of the claims, nor based on information submitted in an information disclosure statement. In the Office Action dated July 6, 2007, Claim 31 was rejected under 35 U.S.C. 103(a) by Suarez in view of Hejlsberg. In the Final Office Action dated December 31, 2007, Claim 31 was rejected under 35 U.S.C. 103(a) by Suarez in view of Hejlsberg and further in view of Bowman-Amuah. Applicant notes that Claim 31 was not amended in the response filed on October 4, 2007. Also, no information disclosure statement has been filed citing the Bowman-Amuah reference prior to the Final Office Action. Accordingly, Applicant respectfully submits that the finality of the Final Office Action dated December 31, 2007 is premature and respectfully requests the pending application be withdrawn from final rejection.

Further, in the response filed on October 4, 2007 Applicant traversed the Official Notice taken in the Office Action dated July 6, 2007. The Final Office Action did not provide a showing of the facts taken by the Official Notice, but merely restated the Official Notice, which is again traversed herein.

Response to Rejection

The pending disclosure is directed to an enterprise integration layer that integrates front-office and back-office systems and brokers transactions for data and services. The back-office systems provide data and services and the front-office systems use the enterprise integration layer to access the data and services provided by the back-office systems. Paragraphs 0057 and 0058 of the pending application describe two use-case examples of the implementation of the enterprise integration layer for providing data access and service invocation, respectively.

The enterprise integration layer is aware of business events rather than merely passing on data and messages. The modular architecture of the enterprise integration layer decouples the source and target systems, thereby providing enterprise-wide visibility to business events and transactions. The enterprise integration layer can define and generate business events and publish the business events to a message broker such that all applications that need to be aware of the events are made aware of the events. Business events are key milestones within a process flow. The definition and automatic generation of business events by the enterprise integration layer can make an enterprise business event-aware. When key business events are available, applications can readily use them rather than having to deduce them by replicating data and applying rules, which can be time-consuming and error prone.

The enterprise integration layer may store event notification rules that define criteria for determining when to publish what information to the message broker. For example, an event can be considered to occur upon the creation, reading, updating, or deleting of an object, upon the invocation of a particular method, upon the evaluation of

an expression, or when similar activities occur. Rules regarding such functions can be associated with particular interactions or transactions that are brokered between the front-office and back-office systems by the enterprise integration layer.

When the event notification rules of the enterprise integration layer indicate that components elsewhere in the enterprise need to be aware of the event, then the event is published to the message broker. For example, the enterprise integration layer publishes events based on the transactions it is brokering, such as data creation, updating, and deletion transactions. The message broker may exchange messages with other systems using the publish/subscribe paradigm. The message broker may automatically subscribe to all of the business events published by the enterprise integration layer. The message broker may then make the entire enterprise aware of the business events by publishing messages in a common format on a message bus or a message queue. For example, the enterprise integration layer, one or more of the front-office systems, and/or one or more of the back-office systems can subscribe to information published by the message broker. Therefore, the message broker provides a foundation for business process automation by allowing integration of both data and business logic across applications.

A detailed discussion of components of the architecture of the enterprise integration layer and the message broker follow. The enterprise integration layer may include an enterprise object model that defines objects that represent the data and services provided by the back-office systems as described in paragraphs 0043 and 0044. For example, the enterprise object model may be defined through the use of a Unified Modeling Language (UML) graphical editor.

Front-office applications may access the objects in the enterprise object model through standardized client access interfaces that enable standardized access to back-office data and services through a plurality of different technologies as disclosed in paragraph 0040 and 0051. By providing access to objects that model the back-office data and services, the client access interfaces eliminate the tight coupling between the front-office systems and the back-office systems. Further, the modular architecture provided by the enterprise object model allows rapid changes to support new requirements.

Upon an object in the enterprise object model being accessed through the client access interfaces, a business object server may implement any data functions and service methods associated with the accessed object. The business object server may implement the data functions and service methods by performing object assembly, object disassembly, and service invocation functions, as described in paragraphs 0048-0050.

A set of adaptors may be used to map between the data services modeled in the enterprise object model and the data and functions of the back-office systems as described in paragraphs 0044-0046. The enterprise integration layer also includes a rules engine that defines and stores rules regarding criteria for when to publish the business events and rules regarding transforming data from a common format, such as the format of the enterprise object model, to a format of the back-office systems as disclosed in paragraph 0045.

The enterprise integration layer further includes a business event repository that contains definitions of the business events that are of interest to a plurality of the

computing applications and also identifies all of the publishers for each of the business events as disclosed in paragraph 0046. Paragraph 0041 discloses that events are a key milestone within a process flow. Paragraph 0050 discloses that upon the occurrence of an event, if the business event repository indicates that components elsewhere in the enterprise need to be aware of the event, then the event is published to a message broker.

Paragraphs 0062-0065 disclose that the message broker is a middleware layer that can connect disparate applications and transport information in a consistent format between systems. Events may be published to a message bus or a message queue on the message broker in a standard format to minimize or eliminate data replication. Also, the message broker may include connectors and adapters for integrating applications with the messaging environment. A source application may publish an event to the message broker through a source application adapter. The source application adaptor transforms data of the business event from a format of the source application to a standard data format. A target application adaptor may subscribe to events desired by a target application, transform data of the event from the standard format to a format of the target application so that the target application can retrieve a message. The middleware architecture of the message broker can eliminate the need for tight integration between application programming interfaces and therefore provide a more flexible environment.

Applicant respectfully submits that none of the applied art alone or in combination teaches or suggests an enterprise integration layer and a messaging system as described above and claimed. All of the pending rejections rely on Suarez

as a base reference. Suarez is directed to a peer-to-peer-type distributed computer environment that relies on agents to provide interoperability. The pending claims are directed to a client-server-type distributed computer environment that relies on an enterprise integration layer (i.e., middleware) to integrate front-office systems with back-office systems. By utilizing a distributed computing architecture where front-office systems have to interact through the enterprise integration layer to use back-office systems, the enterprise integration layer of the pending claims may become business event-aware and may publish business events based on the interactions between the front-office systems and the back-office systems through the enterprise integration layer. Suarez is directed to a wholly different paradigm in distributed computing. The fundamental differences in the distributed computing paradigms used by Suarez and the pending claims highlight the differences discussed in detail below. At the highest level, the distributed computing architecture of Suarez does not have any central means for providing interoperability between services. Rather, Suarez relies on agents at each host computer to provide interoperability with other agents and services. Accordingly, the architecture of Suarez is not business event-aware and does not have an enterprise integration layer that publishes business events based on interactions between services.

A detailed discussion of these and other distinctions between the applied art and the pending claims follows.

Response to Rejections Under 35 U.S.C. 103**Claim 1:**

Claim 1 was rejected under 35 USC § 103(a) as being unpatentable over Suarez (U.S. Patent No. 5,790,789, hereinafter "Suarez") in view of Hejlsberg et al (U.S. Patent No. 7,165,239, hereinafter "Hejlsberg") and further in view of Bowman-Amuah (U.S. Patent No. 6,742,015).

I, _____ Suarez in view of Hejlsberg and Bowman-Amuah does not teach or suggest automatically publishing business events in accordance with the interactions between the front-office systems and the back-office systems.

As noted by the United States Supreme Court in *Graham v. John Deere Co. of Kansas City*, an obviousness determination begins with a finding that **"the prior art as a whole in one form or another contains all" of the elements of the claimed invention.** See *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 22 (U.S. 1966). Claim 1 recites, "the enterprise integration layer automatically publishes business events in accordance with the interactions between the front-office systems and back-office systems." The Final Office Action does not appear to address this limitation and establish a finding that the applied art contains this limitation. Therefore, the Final Office Action has failed to establish a finding that the prior art as a whole in one form or another contains **all** of the claimed elements. Accordingly, Applicant respectfully submits that Claim 1 is allowable for at least the reason that none of the applied art teach or suggest the limitation, "the enterprise integration layer automatically publishes business events in accordance with the interactions between the front-office systems and back-office systems."

As noted above, the Final Office Action did not address these limitations. The closest disclosure in the art of record is found in an event service of disclosed in Column 21, lines 35-51, reproduced below.

"The Event service provides the ability to create, update, publish and subscribe to global or system defined events. The present system is constantly monitoring its environment and reacting accordingly. This is a powerful feature which allows agents, services and users to define reactions to certain events. For example, suppose that a marketing department wishes to be informed when a project has moved into the beta-testing phase. This request can be specified to the appropriate agent and service so that when the project changes to "beta-testing" mode, an electronic mail will be sent to the department making the request. These event services provides a means of describing behavior in the form of events-conditions-actions (ECAs). ECAs describe system recognized events that trigger the present system to determine if a particular event is of interest."

As noted above, an example is described of a marketing department submitting a request to the appropriate agent and service to be informed when a project has moved into the beta-testing phase. Upon the project changing to beta-testing, an e-mail may be sent to the marketing department that originated the request. Applicant notes that the event in this example (i.e., the project changing to beta-testing) is not published (i.e., e-mailed) in accordance with interactions between the host computers 60. Rather, the event is published based on a project associated with a service and an agent meeting a defined condition. Further, the event is not published by an enterprise integration layer that integrates a plurality of front-office systems with a plurality of back-office systems, as claimed.

II. Suarez in view of Heilsberg and Bowman-Amuah does not provide any teaching or suggestion of a messaging system that automatically subscribes to the business events published by the enterprise integration layer.

Claim 1 recites, "a messaging system coupled to the enterprise integration layer that automatically subscribes to the business events published by the enterprise integration layer."

Assuming *arguendo* that the event service disclosed by Suarez does provide teaching of an enterprise integration layer automatically publishing business events in accordance with the interactions between the front-office systems and the back-office systems, Applicant respectfully submits that the applied art does not further provide any teaching or suggestion of the message system, as claimed.

The Final Office Action relied on disclosure in column 12, lines 37-64 of Suarez to read on these limitations. Applicant notes that this disclosure is merely directed to registering services, agents, and objects within the distributed environment. By registering, services, agents, and objects are able to be located within the distributed environment. Applicant notes that the cited portion of Suarez does not provide any teaching or suggestion of a messaging system or of subscribing to events published by an enterprise integration layer. Further, there is no teaching or suggestion of automatically subscribing to the events published by the event service of Suarez.

The Final Office Action attempts to cure these deficiencies by stating, "The claimed feature of 'automatically subscribes' merely automates procedures that have been well established in the area of business software, it is the examiners position that that automation of a process does not establish novelty (*In re Verner*, 120 USPQ 192, 194)." Applicant respectfully disagrees with such an assertion. While the publish/subscribe messaging paradigm may be well established, as described in background section of the pending application in paragraph 0006, automatically

subscribing to published events is not a simple an automation of a previously manual process. A subscriber may not be interested in every event published and as such may subscribe to only those events that are of particular interest to the subscriber. However, the messaging system of the pending claims is interested in every event published by the enterprise integration layer, and as such may automatically subscribe to every event published by the enterprise integration layer.

As described above, the messaging system acts as another middleware layer that decouples the publishers and subscribers of events. Accordingly, the claimed messaging system makes events persistent, transforms messages for subscribers of the events (see dependent Claims 40 and 41), and allows subscribers interested in an event to easily plug in to that event. Therefore, the messaging system can eliminate the need for tight integration between application programming interfaces and provide a more flexible environment.

III. ~~Suarez in view of Hejlsberg and Bowman-Amuah does not teach or suggest an enterprise integration layer.~~

Amended Claim 1 requires that the enterprise integration layer “integrates a **plurality** of front-office systems with a **plurality** of back-office systems” (emphasis added). Claim 1 further requires that “the back-office systems **provide** data and services and the front-office systems **use** the enterprise integration layer to access the data and services provided by the back-office systems” (emphasis added).

The Final Office Action continues to rely on Fig. 11 of Suarez to teach these limitations. Fig. 11 of Suarez simply illustrates the process of communication between two services. Column 26, lines 40-42 of Suarez discloses, “In Fig. 11, a **computer**

host is shown containing a Bus Agent 140, two agents 141, 142 and their corresponding services 143,144" (emphasis added). Therefore it is clear that the disclosure in Fig. 11 of Suarez is directed to communication between two services within a single computer host. There is no teaching or suggestion in Fig. 11 of an enterprise integration layer that integrates a plurality of front-office systems with a plurality of back-office systems, as required by the claims.

A more relevant section of Suarez is the discussion of the computer architecture of Suarez corresponding with Fig. 1 and Fig. 6. Fig. 6 provides a more detailed representation of the architecture disclosed by Suarez. As shown, Fig. 6 includes a plurality of users 13, a plurality of host computers 60, a plurality of configuration databases 64, directory services 67, repositories 66, and a communication network 59. The host computers 60 may be segregated into various domains 62. Each of the host computers 60 may support one or more services 72. Each of the services 72 may be accessed through or communicate through an agent 70. An agent 72 provides interconnectivity and services on behalf of a user or another agent.

Suarez discloses in Column 8, lines 58-65 that the communication network 59 supports communication between the computer hosts 60. Further, Column 9, lines 28-30 discloses that agents facilitate cooperation and collaboration between agents on different hosts. Still further, Column 15, line 66 - Column 16, line 1 discloses that each service comprises as a minimum, the capacity to send and receive messages.

Looking back to the claim limitations of Claim 1, the plurality of back-office systems are recited to provide data and services. Therefore, the plurality of host computers 60 of Suarez may broadly be interpreted as the claimed "plurality of back-

office systems". However, Suarez does not disclose a plurality of "front-office systems". In particular, Claim 1 has been amended to require that the claimed "front-office systems" use the enterprise integration layer to access the data and services provided by the back-office systems. As noted above, each of the host computers 60 of Suarez may directly communicate with another of the host computers 60 through agents on the host computers 60 and through the communication network 59. Therefore, there is no structure in Suarez that integrates a plurality of the host computers 60 with another plurality of host computers 60 such that the plurality of host computers 60 can access the data and services provided by the other plurality of host computers 60.

Assuming *arguendo* that a subsequent Office Action will attempt to interpret the communication network 59 of Suarez as the claimed enterprise integration layer, Applicant notes that communication network 59 does not comprise all of the limitations of the claimed enterprise object model, the set of client access interfaces, the business object server, or the set of adaptors as recited in the limitations of a1-a4.

Further, assuming *arguendo* that a subsequent Office Action will attempt to interpret the agents of Suarez as the claimed enterprise integration layer, Applicant notes that the agents are software processes that are executed on the host computers 60. Therefore, the agents do not provide any structure to integrate a plurality of host computers 60 with another plurality of host computers 60. Also, the software agents only enable communication between one of the host computers 60 and another of the host computers 60. Further, the agents of Suarez do not comprise all of the limitations of the claimed enterprise object model, the set of client access interfaces, the business object server, or the set of adaptors as recited in the limitations of a1-a4.

As noted above, the claimed enterprise integration layer integrates a plurality of front-office systems with a plurality of back-office systems through a modular architecture that decouples the source and target systems. By integrating the front-office systems with the back-office systems, the enterprise integration layer provides enterprise-wide availability and visibility to business events and transactions. The enterprise integration layer can define and generate business events and publish the business events to a message broker such that all applications that need to be aware of the events are made aware of the events. The definition and automatic generation of business events by the enterprise integration layer can make an enterprise business event-aware.

IV. There is no motivation to combine the teachings of Suarez with Bowman-Amuah because the agents of Suarez already provide similar functionality of the ORBs disclosed by Bowman-Amuah.

The ORBs described in the cited section above provide similar functionality as the agents of Suarez. Suarez discloses in column 9, lines 27-30, "[T]he agents represent a standard architecture which facilitates cooperation and collaboration between agents associated with different hosts and various services." The Final Office Action stated, "It would be obvious to one having ordinary skill in the art at the time of the invention to combine Suarez ('789)'s method with Bownman-Amuah ('015)'s teaching in order to create an abstraction layer that encapsulates differences between objects and allows interaction via common interface." Based on the cited portion of Suarez, the agents already provide this layer of abstraction from the services to enable interaction. What is the motivation to combine teachings of Bowman-Amuah with

Suarez, when the agents of Suarez already perform similar functionality as the ORBs of Bowman-Amuah?

V. Suarez teaches away from the combination with Bowman-Amuah.

Applicant respectfully submits that Suarez teaches away from such a combination. As noted above, Bowman-Amuah discloses in column 76, lines 25-28, "An ORB enables client objects to access server objects either locally or remotely over a network and invoke operations (i.e. functions and methods) on them." Accordingly, the ORBs disclosed by Bowman-Amuah are used in a client-server distributed computing architecture. Suarez discloses many disadvantages in distributed computer environments that use the client-server architecture in column 2, lines 36-61. Rather than using a client-server architecture for a distributed computer environment, Suarez discloses using agents. Applicant respectfully submits that one skilled in the art at the time of the invention would clearly recognize that these are two mutually exclusive distributed computer environment architectures.

VI. The combination of Suarez with Bowman-Amuah would change the principle of operation of Suarez.

Applicant respectfully submits that should ORB's replace the agents of Suarez, as suggested by the Final Office Action, the principle of operation of Suarez would be changed. That is, by using an ORB as the means for providing interoperability, the distributed computing architecture of Suarez would become a client-server architecture. If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270

F.2d 810, 123 USPQ 349 (CCPA 1959)

VII. The limitations “to enable the front-office systems to interact with the back-office systems” are not an intended usage of the claimed system and should be considered a limitation.

The Final Office Action indicated, “the claimed feature of ‘to enable the front-office systems to interact with the back-office systems’ is directed towards intended usage of the claimed systems. In the pending claim, the examiner submits that particular language does not serve as a limitation on the claim.” Applicant respectfully disagrees. Applicant respectfully submits that this language further describes a property of the claimed structure provided by the enterprise integration layer. In particular, the integration provided by the structure of the enterprise integration layer is such that the front-office systems and the back-office systems are enabled to interact with each other. Applicant further notes that the claims further provide how the enterprise integration layer enables interactions through the recitation of specific structures of the enterprise integration layer including the claimed enterprise object model, the set of client access interfaces, the business object server, and the set of adapters, as recited in Claim 1.

In an effort to advance prosecution, Claim 1 has been amended herein to further clarify that the enterprise integration layer enables interactions between the front-office systems and the back-office systems. Specifically, Claim 1 recites, “the enterprise integration layer enables interactions between the front-office systems and the back-office systems ... wherein ... the front-office systems use the enterprise integration layer to access the data and services provided by the back-office systems through the

interactions."

VIII. Suarez in view of Hejlsberg and Bowman-Amuah does not teach or suggest an enterprise object model.

Claim 1 recites, "an enterprise object model which defines objects that model the data and services provided by the back-office systems."

The Final Office Action relied on the disclosure in column 9, lines 14-39 to read on the limitations of the claimed "enterprise object model". The cited portion of Suarez merely provides a general description of agents. Applicant notes that there is no mention of objects that **model** the services. Rather, the cited portion of Suarez may be summarized with, "[T]he agents represent a standard architecture which facilitates cooperation and collaboration between agents associated with different hosts and various services" (Suarez: column 9, lines 28-30). Applicant respectfully submits that the agents do not **model** the services. The agents merely provide an architecture for cooperation and collaboration between agents. As disclosed in column 12, lines 35-64 of Suarez, the term object is used to describe a component within the distributed computing environment such as an agent or a service (Column 15, lines 36-49). Accordingly, the agent and corresponding service are objects themselves, and are not objects that **model** data and services, as claimed.

Applicant respectfully notes the description of enterprise object models found in paragraphs 0043-0044 of the pending disclosure. In contrast to the disclosure of Suarez, an object of the enterprise object model **models** data or services provided by the back-office systems. For example, as disclosed in paragraph 0044, an object may be mapped to/from data and services. As noted in paragraph 0044, the mappings

between objects and the data or services that they model may be one-to-one, one-to-many, or many-to-many. Paragraph 0049 discloses that a single object may be used to aggregate data from multiple back-office systems. Similarly, a single object may be broken up for storage in multiple back-office systems. Paragraph 0050 discloses that a single method call of an object may be translated into multiple service invocations in back-office systems.

Accordingly, Suarez does not provide any teaching or suggestion of an enterprise object model, as claimed.

IX. Suarez in view of Hejlsberg and Bowman-Amuah does not teach or suggest a business object server.

Claim 1 recites, "a business object server coupled to the client access interfaces, wherein the business object server enables the interactions between the front-office systems and back-office systems by implementing data functions and service methods associated with the accessed objects."

The Final Office Action relied on column 11, lines 14-43 and column 34, lines 52-67 of Suarez to read on these limitations. The cited portion of Suarez is the description of the communication between two services illustrated in Fig. 5. While the process illustrated in Fig. 5 does generally disclose an interaction between two services, the process does not teach or suggest implementing data functions and service methods associated with the accessed objects, as claimed. As discussed in detail above, a service is an object according to the disclosure of Suarez. If a user 13 wants to use a service, they simply access the service directly through the appropriate agent. Therefore, there is no teaching or suggestion of implementing any other data functions

or service methods associated with an object prior to accessing the service.

X. Suarez in view of Hejlsberg and Bowman-Amuah does not teach or suggest a set of client access interfaces.

The Final Office Action relied on the disclosure of agents to read on the claimed set of client access interfaces. As noted above, Suarez does not teach or suggest front-office systems or an enterprise object model. For at least those reasons Suarez does not teach an interface through which the front-office systems access the objects of the enterprise object model. Further, the claims have been amended to clarify that each of the client access interfaces correspond with a different technology and provide a standardized interface. Applicant notes that the agents of Suarez are not taught or suggested to correspond with different technologies.

As disclosed in paragraph 0051 of the pending disclosure, the client access interfaces can include an object interface 342, a relational interface 344, and a web services interface 346. The object interface enables technologies such as JAVA, C, and C++ programs to access objects. The relational interface 344 enables technologies such as SQL ODBC, or JDBC to access objects. The web services interface 346 enables technologies such as HTTP and SOAP to access objects.

XI. Suarez in view of Hejlsberg and Bowman-Amuah does not teach or suggest a set of adapters.

The Office Action indicated that Suarez does not explicitly disclose the claimed set of adaptors. The Final Office Action relied on the disclosure of Hejlsberg to cure the deficiency of Suarez. Hejlsberg discloses a programming framework 132 that permits multi-language development and seamless integration by supporting multiple languages

(Hejlsberg: Column 4, lines 37-45). Hejlsberg discloses that a common language specification (CLS) 140 may be used to integrate code modules written in different programming languages. The CLS 140 specifies a subset of features or rules about features that allow the various languages to communicate. Since different languages are well suited to particular tasks, the seamless integration provided by the CLS 140 allows a developer to use code modules written in different languages (Hejlsberg: Column 5, lines 25-49). Applicant respectfully submits that while the CLS 140 enables integration of various computer languages, the CLS 140 does not perform any transformations. Rather, the CLS 140 simply provides a reduced instruction set (i.e., subset of features or rules about features) that may be recognized by the different languages such that the code modules written in the different languages may communicate with each other.

The Final Office Action relied on the disclosure of Hejlsberg in Column 5, line 60 - Column 6, line 44). The cited section of Hejlsberg discloses that the programming framework 132 encapsulates the operating system 146(1) and object model services 146(2). The object model services 146(2) provide interfacing with other objects to perform various tasks. Calls made to an API layer 142 are handed to the operating system 146(1) or the object model services 146(2) for execution. Hejlsberg discloses that the API layer 142 may be grouped into multiple namespaces. The cited section of Hejlsberg does not provide any teaching or suggestion of transforming objects of the enterprise object model into a format of the back-office systems that correspond with the implementation of the data functions and service methods implemented by the business object server.

XII. There is no motivation to combine Suarez and Hejlsberg.

The Final Office Action stated that it would have been obvious to combine Suarez and Hejlsberg "in order to allow distributed processes to be deployed over non-homogenous networks." Applicant respectfully submits that it is unclear how the teachings of Suarez and Hejlsberg are being combined. How would the CLS 140 and the API layer 142 of Hejlsberg be combined and used with the agents of Suarez? It appears that the agents of Suarez already perform a similar function as the CLS 140 and the API layer 142 of Hejlsberg and the combination would result in destroying the teachings of the Suarez reference. Further, the Final Office Action did not provide any rationale or discussion of why the knowledge of one skilled in the art would suggest this motivation. Also, the Final Office Action did not provide any discussion of any design needs or market pressures to solve a problem through a finite number of identified, predictable solutions where a person of ordinary skill has good reason to pursue the known options within his or her technical grasp.

For at least the reasons established above in sections I-XII, Applicant respectfully submits that independent Claim 1 is not taught or suggested by Suarez in view of Hejlsberg and Bowman-Amuah and respectfully request allowance of this claim.

Claims Depending From Claim 1:

Claims 2-4, 7, and 37-41 were rejected under 35 USC § 103(a) as being unpatentable over Suarez in view of Hejlsberg and further in view of Bowman-Amuah.

Dependent Claims 2-4, 7, and 37-41 depend directly or indirectly from independent Claim 1 and incorporate all of the limitations thereof. Accordingly, for at

least the reasons established in sections I-XII above, Applicant respectfully submits that Claims 2-4, 7, and 37-41 are not taught or suggested by Suarez in view of Hejlsberg and Bowman-Amuah and respectfully request allowance of these claims.

Dependent Claim 37:

VIII. Suarez in view of Hejlsberg and Bowman-Amuah in view of Official Notice does not teach or suggest any of object assembly, object disassembly, and service invocation functions.

Applicant respectfully traverses the Official Notice taken in conjunction with the rejection of Claim 37. Applicant respectfully requests a showing of the facts taken regarding object assembly and object disassembly are well known in the prior art. Further, Applicant respectfully submits that it is unclear how the facts taken in conjunction with the Official Notice are being combined with the teachings of the Suarez, Hejlsberg, and Bowman-Amuah references. Also, Applicant respectfully submits that there is no motivation to combine the teachings of the Official Notice with Suarez, Hejlsberg, and Bowman-Amuah. As discussed above, Suarez does not disclose that the objects model data, but rather are the data (or service). Therefore, it is unclear as to why one skilled in the art would be motivated to more accurately model the data being represented, when the objects of Suarez fully represent the data already. The claimed object assembly and object disassembly functions are used such that an object in the enterprise object model may include composite objects that represent data from multiple back-office systems.

It is unclear how using the claimed object assembly and object disassembly functions more accurately model the data being represented.

Assuming *arguendo* that the facts taken in the Official Notice were known in the prior art, Suarez in view of Hejlsberg and Bowman-Amuah in view of the Official Notice still would not disclose an enterprise integration layer (or other middleware layer) with an business object server that performs the object assembly and object disassemble functions. When the object assembly and object disassembly functions of the business object server are used in the enterprise integration layer in conjunction with the enterprise object model as described above and claimed, the tight coupling between the front-office systems and the back-office systems may be eliminated.

Claim 11:

Claim 11 was rejected under 35 USC § 103(a) as being unpatentable over Suarez in view of Hejlsberg and further in view of Bowman-Amuah.

Claim 11 includes limitations substantially similar to the limitations discussed in sections I-VII and IX-XII above.

XIII. Suarez in view of Hejlsberg and Bowman-Amuah does not teach or suggest a rules engine.

As noted by the United States Supreme Court in *Graham v. John Deere Co. of Kansas City*, an obviousness determination begins with a finding that **“the prior art as a whole in one form or another contains all” of the elements of the claimed invention.** See *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 22 (U.S. 1966).

Claim 11 recites, "a rules engine that defines and stores rules regarding criteria for when to publish the business events in accordance with the interactions and rules regarding transforming data from a common format to a format of the back-office systems." The Final Office Action does not appear to address this limitation and establish a finding that the applied art contains this limitation. Therefore, the Final Office Action has failed to establish a finding that the prior art as a whole in one form or another contains **all** of the claimed elements. Accordingly, Applicant respectfully submits that Claim 11 is allowable for at least the reason that none of the applied art teach or suggest the limitation, "a rules engine that defines and stores rules regarding criteria for when to publish the business events in accordance with the interactions and rules regarding transforming data from a common format to a format of the back-office systems."

As noted above, the Final Office Action did not address these limitations. The closest disclosure in the art of record is found in an event service of disclosed in Column 21, lines 35-51, reproduced below.

"The Event service provides the ability to create, update, publish and subscribe to global or system defined events. The present system is constantly monitoring its environment and reacting accordingly. This is a powerful feature which allows agents, services and users to define reactions to certain events. For example, suppose that a marketing department wishes to be informed when a project has moved into the beta-testing phase. This request can be specified to the appropriate agent and service so that when the project changes to "beta-testing" mode, an electronic mail will be sent to the department making the request. These event services provides a means of describing behavior in the form of events-conditions-actions (ECAs). ECAs describe system recognized events that trigger the present system to determine if a particular event is of interest."

While Suarez discloses ECAs, Suarez does not provide any teaching or suggestion that the ECAs are stored in a rules engine in the enterprise integration layer. Further, none of the applied art provide any teaching or suggestion of the rules engine of the enterprise integration engine further storing rules regarding transforming data from a common format to a format of the back-office systems. As noted above, Hejlsberg merely discloses a reduced instruction set for enabling communication and does not provide any teaching or suggestion of transforming data.

For at least the reasons established above in sections I-VII and IX-XIII, Applicant respectfully submits that independent Claim 11 is not taught or suggested by Suarez in view of Hejlsberg and Bowman-Amuah and respectfully request allowance of this claim.

Claims Depending From Claim 11:

Claims 12-20 were rejected under 35 USC § 103(a) as being unpatentable over Suarez in view of Hejlsberg and further in view of Bowman-Amuah.

Dependent Claims 12-20 depend directly or indirectly from independent Claim 11 and incorporate all of the limitations thereof. Accordingly, for at least the reasons established in sections I-VII and IX-XIII above, Applicant respectfully submits that Claims 12-20 are not taught or suggested by Suarez in view of Hejlsberg and Bowman-Amuah and respectfully request allowance of these claims.

Claim 21:

Claim 21 was rejected under 35 USC § 103(a) as being unpatentable over Suarez in view of Hejlsberg and further in view of Bowman-Amuah.

Claim 21 includes limitations substantially similar to the limitations discussed in sections I-VII and IX-XII above.

XIV. Suarez in view of Hejlsberg and Bowman-Amuah do not teach or suggest a business event repository.

As noted by the United States Supreme Court in *Graham v. John Deere Co. of Kansas City*, an obviousness determination begins with a finding that “the prior art as a whole in one form or another contains all” of the elements of the claimed invention. See *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 22 (U.S. 1966). Claim 21 recites, “a business event repository that contains definitions of the business events that are of interest to a plurality of the computing applications and also identifies all of the publishers for each of the business events.” The Final Office Action does not appear to address this limitation and establish a finding that the applied art contains this limitation. Therefore, the Final Office Action has failed to establish a finding that the prior art as a whole in one form or another contains **all** of the claimed elements. Accordingly, Applicant respectfully submits that Claim 21 is allowable for at least the reason that none of the applied art teach or suggest the limitation, “a business event repository that contains definitions of the business events that are of interest to a plurality of the computing applications and also identifies all of the publishers for each of the business events.” Further, Applicant respectfully submits that none of the applied art provides any teaching or suggestion of the business event repository as claimed.

For at least the reasons established above in sections I-VII, IX-XII, and XIV, Applicant respectfully submits that independent Claim 21 is not taught or suggested by Suarez in view of Hejlsberg and Bowman-Amuah and respectfully request allowance of this claim.

Claims Depending From Claim 21:

Claims 22-30 were rejected under 35 USC § 103(a) as being unpatentable over Suarez in view of Hejlsberg and further in view of Bowman-Amuah.

Dependent Claims 22-30 depend directly or indirectly from independent Claim 21 and incorporate all of the limitations thereof. Accordingly, for at least the reasons established in sections I-VII, IX-XII, and XIV above, Applicant respectfully submits that Claims 22-30 are not taught or suggested by Suarez in view of Hejlsberg and Bowman-Amuah and respectfully request allowance of these claims.

Claim 31:

Claim 31 was rejected under 35 USC § 103(a) as being unpatentable over Suarez in view of Hejlsberg and further in view of Bowman-Amuah.

Claim 31 was rejected in parallel with Claim 1 for at least the same reasons. Applicant notes that the limitations of Claim 31 are not parallel with Claim 1. Rather, the limitations of Claim 31 parallel the limitations of dependent Claim 41.

XV. Suarez in view of Hejlsberg and Bowman-Amuah does not teach or suggest transforming data.

Claim 31 requires transforming data related to the one of the business events

from a format of the source application to the common format and transforming the data related to the one of the business events from the common format to a format of the target application. As argued previously in prosecution, there is no teaching or suggestion of transforming data in Suarez. Rather, in Suarez all data is exchanged through messaging where the messages have a well-defined format. Due to the well-defined nature of the communication, there is no disclosure of or necessity to transform data for enabling the communication. Suarez provides a detailed discussion of the process for communicating between services in Column 11, lines 15-43. While Suarez does disclose that the **content** of a message may be modified, Suarez does not provide any teaching or suggestion of transformation of data **formats** in this discussion.

Further, while Suarez does disclose an event service in Column 21, lines 35-51, Suarez does not provide any teaching or suggestion of transforming the format of the message from a format of a source application to a common format and from the common format to a format of a target application, as required by Claim 31. Applicant respectfully submits that the disclosure of the CLS 140 and the API layer 142 of Hejlsberg does not cure the deficiencies of Suarez. In particular, Hejlsberg does not provide any teaching or suggestion of transforming data related to a business event upon the occurrence of the business event.

As discussed in detail above, the middleware architecture of the message broker can eliminate the need for tight integration between application programming interfaces and therefore provide a more flexible environment.

For at least the reasons established above in section XV, Applicant respectfully submits that independent Claim 31 is not taught or suggested by Suarez in view of Hejlsberg and Bowman-Amuah and respectfully request allowance of this claim.

Claims Depending From Claim 31:

Claims 32-34 and 36 were rejected under 35 USC § 103(a) as being unpatentable over Suarez in view of Hejlsberg and further in view of Bowman-Amuah.

Dependent Claims 32-34 and 36 depend directly or indirectly from independent Claim 31 and incorporate all of the limitations thereof. Accordingly, for at least the reasons established in section XV above, Applicant respectfully submits that Claims 32-34 and 36 are not taught or suggested by Suarez in view of Hejlsberg and Bowman-Amuah and respectfully request allowance of these claims.

Claim 42:

Claim 42 was added by this amendment. Applicant respectfully submits that no new matter has been added by this amendment. Claim 42 includes limitations substantially similar to the limitations discussed in sections I-XIV above. For at least the reasons established above in sections I-XIV, Applicant respectfully submits that independent Claim 42 is not taught or suggested by Suarez in view of Hejlsberg and Bowman-Amuah and respectfully request allowance of this claim.

Conclusion

Applicant respectfully submits that the present application is in condition for allowance for the reasons stated above. If the Examiner has any questions or comments or otherwise feels it would be helpful in expediting the application, he is encouraged to telephone the undersigned at (972) 731-2288.

The Commissioner is hereby authorized to charge payment of any further fees associated with any of the foregoing papers submitted herewith, or to credit any overpayment thereof, to Deposit Account No. 21-0765, Sprint.

Respectfully submitted,

Date: February 28, 2008

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